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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,578	04/20/2004	Ralf Bohnke	450117-02627.1	5266
20999	7590	05/05/2006	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			PHU, PHUONG M	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,578

Applicant(s)

BOHNKE ET AL.

Examiner

Phuong Phu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the layout of the specification is not complied with 37 CFR 1.77(b).

Appropriate correction is required.

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino

acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Drawings

3. The drawings are objected to because:

Figures 1-4 and 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 8, 9 and 11-13 are objected to because of the following informalities:

-Claim 8 recites the limitation "where N is a normalization factor". This limitation is suggested to be changed to --where N is a non-zero normalization factor--, otherwise for the case $N=0$, the limitation would render the claim vague/indefinite on how the claimed procedure of "generating at least one OFDM symbol by modulating 12 subcarriers of an OFDM scheme" is carried out according to a zero sequence.

-Similarly, in claims 11-13, the limitation "where N is a normalization factor is suggested to be changed to --where N is a non-zero normalization factor--.

-Claim 9 recites the limitations "the sequence S" and "the remaining 15 input values". These limitations are lack of antecedent basis.

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Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 8-13 are rejected under 35 U.S.C. 102(e) as being anticipated by the prior art, admitted by the applicant, (hereafter referred as “the admitted prior art”).

-Regarding to claim 8, the admitted prior art teaches a method comprising:

step of generating at least one OFDM symbol by modulating 12 subcarriers of an OFDM scheme according to the following sequence:

$$B_{-26 \dots 26} = N * \{0, 0, (1+j), 0, 0, 0, (-1-j), 0, 0, 0, (1+j), 0, 0, 0, (-1-j), 0, 0, 0, (-1-j), 0, 0, 0, (1+j), 0, 0, 0, 0, 0, 0, (-1-j), 0, 0, 0, (-1-j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0\},$$

(which considered here equivalent to the claimed limitation “ $S_{26,26}$ ”).

for generating the OFDM symbol:

$$S_{-26,26} = N * \{0, 0, (S1), 0, 0, 0, (S2), 0, 0, 0, (S3), 0, 0, 0, (S4), 0, 0, 0, (S5), 0, 0, 0, (S6), 0, 0, 0, 0, 0, 0, (S7), 0, 0, 0, (S8), 0, 0, 0, (S9), 0, 0, 0, (S10), 0, 0, 0, (S11), 0, 0, 0, (S12), 0, 0\},$$

where N is a normalization factor “sqrt(2)”; and

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step of inverse Fourier transforming the generated OFDM symbol thereby generating a time domain signal (see specification of the instant application, pages 1-4).

-Regarding to claim 8, the admitted prior art teaches that the step of inverse Fourier transforming comprises a step of applying a 64-point inverse fast Fourier transform (IFFT) to a sequence S, with the remaining 15 input values to the IFFT being set to zero (see the specification, pages 3 and 4).

-Regarding to claim 10, the admitted prior art teaches a step of cyclically extending the time domain signal (see the specification, page 4, lines 1 and 2).

-Regarding to claim 11, as applied to claims 8-10, in the admitted prior art, a device is inherently included for carrying a method (as explained in claims 8-10) for generating the time domain signal to be transmitted in order for being received by a receiver (see the specification, page 1, lines 14-20, page 3, lines 4-7), wherein the device comprises:

means of generating at least one OFDM symbol by modulating 12 subcarriers of an OFDM scheme according to the following sequence:

$$B_{-26 \dots 26} = N * \{0, 0, (1+j), 0, 0, 0, (-1-j), 0, 0, 0, (1+j), 0, 0, 0, (-1-j), 0, 0, 0, (-1-j), 0, 0, 0, (1+j), 0, 0, 0, 0, 0, 0, (-1-j), 0, 0, 0, (-1-j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0, 0, (1+j), 0, 0\},$$

(which considered here equivalent to the claimed limitation “ $S_{26,26}$ ”).

for generating the OFDM symbol:

$$S_{-26,26} = N * \{0, 0, (S1), 0, 0, 0, (S2), 0, 0, 0, (S3), 0, 0, 0, (S4), 0, 0, 0, (S5), 0, 0, 0, (S6), 0, 0, 0, 0, 0, 0, (S7), 0, 0, 0, (S8), 0, 0, 0, (S9), 0, 0, 0, (S10), 0, 0, 0, (S11), 0, 0, 0, (S12), 0, 0\},$$

where N is a normalization factor “sqrt(2)”; and

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means of inverse Fourier transforming the generated OFDM symbol thereby for generating the time domain signal (see specification of the instant application, pages 1-4).

-Regarding to claims 12 and 13, as similarly applied for claims 8-11, the admitted prior art teaches a method and associated system for synchronizing a receiver (see figure 2, page 1, lines 14-20, page 3, lines 4-7, page 7, line 4) of an OFDM transmission system, the method/system (see figure 2) comprising:

step/means of receiving a preamble signal (1);

step/means (2-9) of autocorrelating the received preamble signal,

wherein the preamble signal has been configurably obtained by generating at least one OFDM symbol by modulating 12 subcarriers of an OFDM scheme according to the following sequence: $B_{-26 \dots 26} = N \{0,0,(1+j),0,0,0,(-1-j),0,0,0,(1+j),0,0,0,(-1-j),0,0,0,(-1-j),0,0,0,(1+j),0,0,0,0,0,0,(-1-j),0,0,0,(-1-j),0,0,0,(1+j),0,0,0,(1+j),0,0,0,(1+j),0,0,0,(1+j),0,0\}$, (which considered here equivalent to the claimed limitation “ $S_{26,26}$ ”).

for generating the OFDM symbol:

$S_{-26,26} = N \{0,0,(S1),0,0,0,(S2),0,0,0,(S3),0,0,0,(S4),0,0,0,(S5),0,0,0,(S6),0,0,0,0,0,0,(S7),0,0,0,(S8),0,0,0,(S9),0,0,0,(S10),0,0,0,(S11),0,0,0,(S12),0,0\}$,

where N is a normalization factor “sqrt(2)”; and

step/means of inverse Fourier transforming the generated OFDM symbol thereby generating a time domain signal (see the specification, pages 1-4).

Conclusion

7. References 6320915, 6058101, 5608764 and 6359926 are additionally cited because they are pertinent to the claimed method/system.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phuong Phu
04/28/06

PHUONG PHU
PRIMARY EXAMINER

Phuong Phu
Primary Examiner
Art Unit 2611